

# Alg. 1 BE

Thursday 3-1-12

① Simplify:

Ⓐ  $\sqrt{54}$

Ⓑ  $\sqrt{50}$

Ⓒ  $\sqrt{\frac{4}{3}}$

Ⓓ  $3\sqrt{8} \cdot 2\sqrt{6}$

Ⓔ  $3\sqrt{5} - \sqrt{5} + 2\sqrt{2}$

② Solve:  $3x^2 + 2x + 7 = 10$

• Steps: ① GCF?

② PST?

③ Magic Numbers?

④ Complete The Square

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• Homework review  $\Rightarrow$  Pg 589/90 4-6, 9, 10, 15-21  
Pg 595 #4-9

$$\textcircled{2} \quad 3x^2 + 2x + 7 = 10$$

$$\frac{3x^2}{3} + \frac{2x}{3} + \text{cloud} = \frac{3}{3} + \text{cloud}$$

$$x^2 + \frac{2}{3}x + \frac{1}{9} = 1 + \frac{1}{9}$$

$$\downarrow \quad \downarrow$$

$$\left(x + \frac{1}{3}\right)^2 = \frac{9}{9} + \frac{1}{9} = \frac{10}{9}$$

$$\sqrt{\left(x + \frac{1}{3}\right)^2} = \pm \sqrt{\frac{10}{9}} = \pm \frac{\sqrt{10}}{3}$$

$$x + \frac{1}{3} = \pm \frac{\sqrt{10}}{3}$$

$$x = -\frac{1}{3} \pm \frac{\sqrt{10}}{3}$$

$$x = \left\{ \frac{-1 + \sqrt{10}}{3}, \frac{-1 - \sqrt{10}}{3} \right\}$$

or  $x = \left\{ -\frac{1}{3} + \frac{\sqrt{10}}{3}, -\frac{1}{3} - \frac{\sqrt{10}}{3} \right\}$

\*④

conjugates binomial of the  
form  $(a-b)(a+b)$   
or  $(a+b)(a-b)$

Ex) the conjugate of  $1+\sqrt{3}$  is  $1-\sqrt{3}$

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TIP: use conjugates to RATIONAL  
A denominator

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④ Ex)  $\frac{1}{2+\sqrt{3}} \cdot \frac{2-\sqrt{3}}{2-\sqrt{3}} = \frac{2-\sqrt{3}}{1} = \boxed{2-\sqrt{3}}$

$$(2+\sqrt{3})(2-\sqrt{3}) =$$

$$4 - 2\sqrt{3} + 2\sqrt{3} - 3 = 1$$

$$\begin{array}{c} \updownarrow \\ 2^2 \end{array}$$

$$-(\sqrt{3})^2$$

Difference of  
Squares Pattern

(EX)

$$\frac{2}{3+\sqrt{5}} \cdot \frac{3-\sqrt{5}}{3-\sqrt{5}} = \frac{6-2\sqrt{5}}{4}$$

$$\begin{array}{c} \downarrow \quad \downarrow \\ 3^2 - 5 = 4 \end{array}$$

$$= \boxed{\frac{3-\sqrt{5}}{2}}$$

CK

$$\frac{2}{3+\sqrt{5}} = \frac{2}{3+2.24} = 0.382$$

$$\frac{3-\sqrt{5}}{2} = \frac{3-2.24}{2} = 0.38 \checkmark$$

EX 5  
Pg 589

$$\frac{2}{6-\sqrt{3}} \cdot \frac{6+\sqrt{3}}{6+\sqrt{3}}$$

$$= \frac{12+2\sqrt{3}}{36-3} = \boxed{\frac{12+2\sqrt{3}}{33}}$$

## HOMEWORK:

① Pg. 590 # 27-28

# 33-37

# 39-40

② Pg 595 # 10-12

# 33